

## A NEW RECORD OF *TOMOCERUS BAICALENSIS* FROM CHINA WITH ITS REDESCRIPTION (COLLEMBOLA: TOMOCERIDAE)<sup>1</sup>

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**ABSTRACT:** The Russian species, *Tomocerus baicalensis*, is reported for the first time from China and it is redescribed on the basis of these specimens.

**KEY WORDS:** *Tomocerus baicalensis*, Collembola, Tomocerina, Tomereninae, China, new record.

The genus *Tomocerus* (*s.s.*) is distinguished from other Tomoceridae by a combination of six characteristics: (1) antennal segments III and IV annulate, (2) proximal part of dens lacking large spinelike outer setae and inner basal scale like appendages, (3) mucro with two basal teeth, (4) a small toothlet present on the outer basal tooth, (5) 6 + 6 eyes, and (6) a single seta on the trochanteral organ position on the trochanter and the proximal portion of the femur. There are fifty-five species of the genus *Tomocerus* (*s.s.*), eighteen of them have been described or reported from China (Zhao et al. 1997); four from Sichuan (*emeicus* and *maximus* Liu et al 1999), *minor* Lubbock 1862 and *vulgaris* Tullberg 1871 (Liu et al. 1998); four from Tibet (*monticolus*, *obscurus*, *parvus* and *zayuensis* Huang and Yin 1981); three from Anhui (*similis* Chen and Ma 1997, *spiuulus* Chen and Christiansen 1998, *cheni* Ma and Christiansen 1998); two from Fujian *caputvivioleaceus* and *deogyuensis* Lee 1975 (Liu et al. 1998); one, *folsomi* Denis 1929, from Yunnan; one, *cuspidatus* Börner 1909, from Taiwan (Yosii 1940); one, *kinoshitai* Yosii 1954, from Hunan; one, *ocreatus* Denis 1948, from Zhejiang; and, one, *sibiricus* Reuter 1891, from Hebei (Huang and Liu 1995). A species new to China, *Tomocerus baicalensis* Martynova 1969, is reported from Xinjing, Northwest China. This species is redescribed on a basis of Chinese specimens.

### *Tomocerus (Tomocerus) baicalensis* Martynova, 1969 (Figs. 1-16)

**Body length:** Chinese specimens maximum 3.9 mm.

**Color:** Ground color pale yellow. Eye patches dark blue. Frons and anterior margin of Th. II with greenish pigment. Ant. II-IV green or blue. Pale greenish pigment also present on Abd. III and IV, tibiotarsi and dens (Fig. 1).

**Head:** Eyes 6+6, subequal. Antennae 2.4 to 3.8 times as long as cephalic diagonal. Labral setae 4/5, 5, 4, all smooth; each of distal 3 rows on papillae. Anterior margin of labrum with 4 recurved spinules. Dorsal macrochaetae of head as follows: anterior area (A) 2/4; mid (M) 2/7; lateral (L) 2 (L1, L2), posterior (P) 4. Posterior margin of dorsal head with one row of 48-60 tiny setulae (Fig. 2).

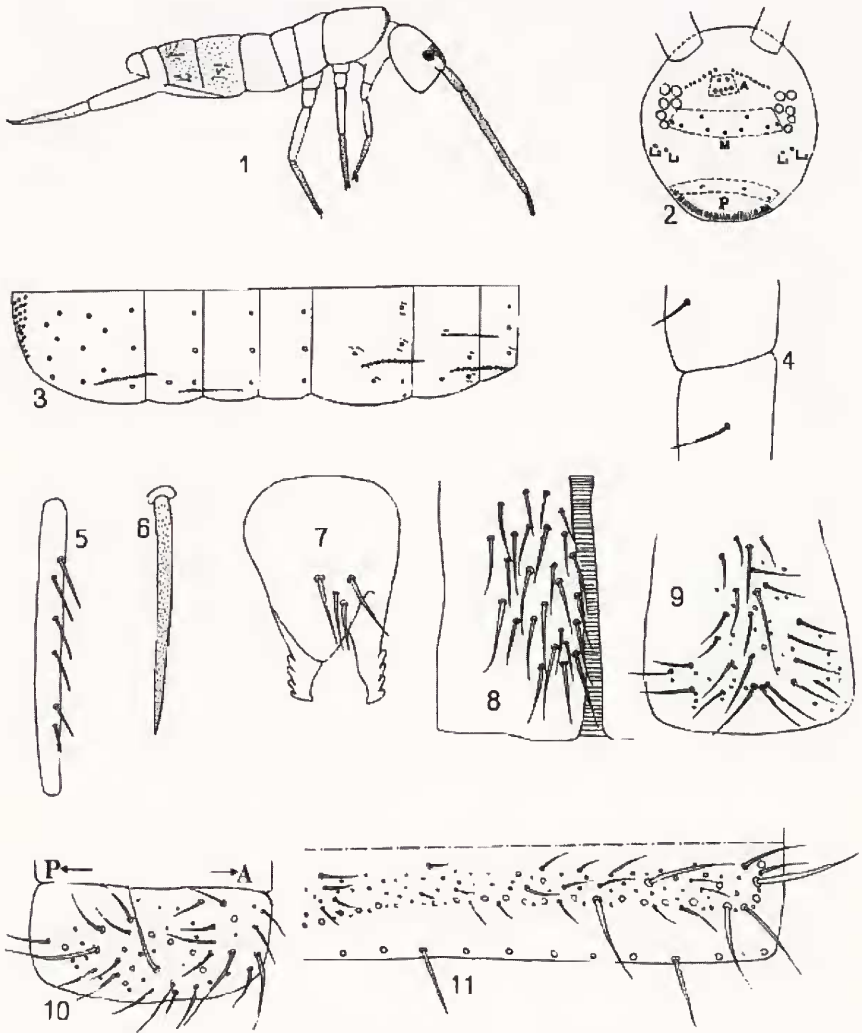
**Thorax:** Macrochaetae and bothriotracha as shown in Fig. 3. Tibiotarsus with 2-5, 4-6, 4-6 blunt spiny setae respectively on ventral side of leg I-III (Figs. 5 and 6). Unguis rather slender; a pair of pseudonychia developed, 0.36-0.48 times as long as inner edge of unguis; inner teeth 5-6, 5-6 and 4-

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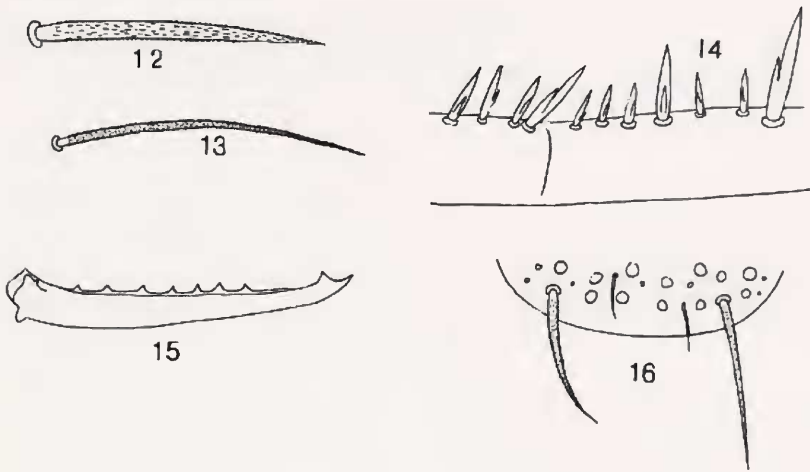
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Figs. 1-16. *Tomocerus baicalensis* Martynova, 1969. 1. Habitus; 2. Dorsum of head, A= anterior microchaetae, M= median macrochaetae, L= lateral macrochaetae, P= posterior macrochaetae; 3. Chaetotaxy of body; 4. trochanteral organ; 5. hind tibiotarsus, showing blunt setae; 6. enlargement of blunt seta; 7. anterior face of tenaculum; 8. anterior face of ventral tube; 9. posterior face of ventral tube; 10. lateral flap of ventral tube; 11. dorsal face left side of manubrium; 12. enlargement of thick dorso-lateral large seta on manubrium; 13. enlargement of normal large seta on dorsal stripes; 14. dental spines; 15. mucro; 16. upper anal valve.



6 respectively on leg I-III. Unguiculus lanceolate without inner tooth. Tenent hair thick, 0.90-1.08 times as long as inner edge of unguis, apex spatulate.

**Abdomen:** Macrochaetae and bothriotricha on Abd. I-V as shown in Fig. 3. Tenaculum unscaled, with 4+4 teeth, 1-9 smooth setae on corpus. Ventral tube scaled; with 25-28 setae on each side of anterior face (Fig. 8), 46-65 on posterior face (Fig. 9), 45-75 on each lateral flap. Dentes 4.3 to 5 times as long as mucro and 1.4 to 1.78 times as long as manubrium (Table 1). Manubrium scaled, dorso-laterally with 1 row of 9-11 large setae on each side, all weakly ciliate and strongly tapered near apex (Fig. 12); dorsally with 2 setaceous stripes, each consisting of numerous acuminate, finely ciliate setae of different sizes, 20-26 of them large (Fig. 13). Dental spines as shown in table 1, dark chestnut brown, each with 1 lateral toothlet near base (Fig. 14). Mucro elongate with numerous ciliate setae; with 4-10 intermediate teeth; apical and anteapical teeth subequal (Fig. 15). Upper anal valve of Abd. VI with 14 large ciliate cylindrical setae arranged in 2 irregular transverse rows (Fig. 16). Scales brownish, hyaline and heavily striated. Trunk macrochaetae and bothriotricha surrounded by 0-3 setulae.

Table 1 Characteristics of some individual Chinese specimens of *Tomocerus baicalensis*.

Locality number	Ratio Antenna/Cephalic diagonal	Dental spine formula	Setae on tenaculum	Body+ head mm	Manubrium length mm	Dentes length mm	Antenna length mm
C9077-1	?	3-4,1/3,1,2,1	1	2.1	0.4	0.6	?
C9077-2	3.83	5-6,1/5,1,2,1	9	3.9	0.6	1.0	2.5
C9077-6	3.70	4,1/2,1,2-3,1	1	2.3	0.3	0.6	1.5
C9077-9	2.80	4-5,1/3,1,2,1	1	2.4	0.3	0.5	1.2
C9077-12	?	4,1/3,1,2,1	4	2.6	0.5	0.7	?
C9077-16	2.40	4-4,1/3,1,2,1	?	2.4	0.3	0.5	1.1
C9077-2	3.20	5,1/2,1,2,1	2	2.8	0.5	0.7	1.6
C9077-3	?	6,1/3,1,2,1	1	2.1	0.4	0.5	1.1

**Ecology:** Under stones and in decayed wood in forest.

**Chinese locality:** China: Xinjiang: Tianshan Mountain: Tianchi Lake, altitude 1980m, VIII-2-2000, Collection number C9075, C9077, and C9078. Thirteen females, all on slides, collected by Chen Jian-xiu, Wang Songjie, and Wang Fang. Deposited in the Department of Biology, Nanjing University.

**Remarks:** This species was first described by Martynova (1969) on a basis of 3 specimens from the southern shores of Lake Baikal. It has not been recorded from Russia since that time. The Chinese specimens, also taken near the shores of a lake, agreed with Martynova's (1969) description and figures of this species. The species belongs to a group of largely East Asian species having the dental spines with multiple teeth. Both the Russian and Chinese populations of *baicalensis* differ from all other species of the group by having at most one secondary toothlet on each spine. There are a few differences between the two populations. These are primarily the body color and pattern and setae on the tenaculum. Martynova's specimens were considerably larger than ours 3.7 – 5.4 mm. compared to ours, which were 2.1 – 3.9 mm. and this probably explains a number of differences such as the tenacular setae number. Michael Potapov examined the types of *baicalensis* and could find no significant morphological differences between them and the drawings of the Chinese specimens we sent him. The difference in color and pattern may represent geographic variation.

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